

REMARKS

Claims 1-20, as amended, are pending for the Examiner's consideration. Claims 1, 4, 15, and 18 have been amended for clarification purposes. Claim 18 has also been amended to respond to an informality rejection. New claims 19-20 have also been added to the application. The specification has also been amended as noted above. The amendments are supported throughout the specification. As these amendments do not introduce new matter, Applicant respectfully requests favorable reconsideration and allowance of the application in view of the above amendments and the following remarks.

The present Office Action is the third substantive action that has been received in this application. Applicant's review of the Office Action and cited art shows that the pending claims are clearly novel and non-obvious over the cited references, namely U.S. Patent No. 6,693,400 to Pedrazzini ("Pedrazzini"), U.S. Patent Publication No. 2002/0084758 to Eroglu ("Eroglu"), U.S. Patent No. 5,315,458 to Sato ("Sato"), and U.S. Patent No. 6,816,758 to Maxwell ("Maxwell"). Applicant's review shows that all of the claimed features of the pending claims are not disclosed or suggested by the cited references. As such, the pending patent claims are patentable after receiving examination in three non-final Office Actions, which likely comprised three prior art searches followed by three different rejections not necessitated by any claim amendment. Accordingly, Applicant requests that Examiner close prosecution by allowing the pending claims.

A. Rejection of Claims 1, 10, and 11 in view of Pedrazzini, Sato, and Eroglu

Claims 1, 10, and 11 are rejected under 35 U.S.C. § 103(a) as being obvious in view of Pedrazzini, Sato, and Eroglu.

In the Office Action, the Examiner concedes that the following features of claim 1, as amended, are lacking from the primary reference (Pedrazzini):

1. An electric motor linear speed controller, comprising:
 - a digital to analog converter means for converting **an 8-bit digital signal to an analog voltage** for setting voltage across a motor;
 - a digital state machine means for converting the duty cycle of an input signal for output to the digital to analog converter means;** and
 - a closed loop feedback means for monitoring and setting the voltage across the motor.**

Considering the extent of features that are lacking from Pedrazzini, it is clear to Applicant that Pedrazzini is non-analogous art and as such should not be applied to the obviousness analysis of

claim 1, as amended. More importantly, the cited art does not remotely motivate or otherwise suggest Pedrazzini in a way that arrives at the claimed invention. In addition, in the Office Action, the Examiner relies on three sources of prior art in addition to Pedrazzini to overcome the deficiencies in Pedrazzini. Specifically, the Examiner relies on Eroglu and Sato and also on Official Notice with respect to the 8-bit digital to analog converter recited in the claim. In total, the Examiner relies on four different sources of prior art for the rejection. The significant deficiencies of Pedrazzini highlight the improper hindsight rejection now imposed, which relies on these four different references and which improperly uses the present application and claims as a template to pick and choose aspects of the prior art in an improper attempt to arrive at the present invention.

Moreover, even with the Examiner's reliance on four sources of prior art, an entire element of claim 1, as amended, is still ignored in the rejection—and not present in the cited references even when improperly combined. Specifically, the last element listed in claim 1, as amended, recites: "a closed loop feedback means for monitoring and setting the voltage across the motor." In the Office Action, the Examiner relies on FIG. 4 of Pedrazzini to show such a feature and specifically identifies the "measured input to #32 at VSN and VSP" to provide such a feature. It is not clear, however, how VSN and VSP can **monitor** the voltage **across** the motor. In FIG. 4 of Pedrazzini, VSN and VSP can only possibly monitor the voltage across the **resistor** (a reference number for the resistor is not provided in Pedrazzini) that is in series with motor 28. VSN and VSP are connected directly across the resistor, not across the motor. Therefore, the voltage across VSN and VSP cannot monitor the voltage across the motor because they are monitoring the resistor. Accordingly, all the features of claim are not disclosed or even suggested by the cited references, whether considered individually or in any combination.

In addition, Applicant does not understand the motivation provided in the Office Action to combine the state machine of Eroglu with the circuitry of Pedrazzini. The Examiner appears to state that the motivation is to implement the relevant circuitry of Pedrazzini in hardware (state machine) of Eroglu. Pedrazzini does not, however, appear to implement any form of logic and would, thus, not require a state machine. Therefore, the Office Action does not appear to provide a motivation for the proposed combination—and the cited references do not provide such motivation, either.

Moreover, claims 10 and 11 depend either directly or indirectly from claim 1, and thus these claims are also patentable even in view of Pedrazzini, Eroglu, and Sato for at least the same reasons.

In view of the above remarks, because each and every recited feature is not identically disclosed, much less suggested, by the cited references, Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claims 1, 10, and 11 because no *prima facie* case of obviousness has been stated on the record.

B. Rejection of Claims in view of Pedrazzini, Sato, Eroglu, and Maxwell

Claims 2-3, 10, and 12-14 are rejected under 35 U.S.C. § 103(a) as being obvious in view of Pedrazzini, Sato, Eroglu, and Maxwell. All of the features of claims 2-3, 10, and 12-14, and new claim 19, however, are not disclosed or suggested by Pedrazzini, Sato, Eroglu, and Maxwell.

Claims 2-3, 10, 12-14, and 19 each depend either directly or indirectly from claim 1, and thus these claims are also not obvious for at least the same reasons as provided above for claim 1. In view of the above remarks, because each and every recited feature is not identically disclosed, much less suggested, by the cited references, Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claims 2-3, 10, 12-14, and 19.

C. Rejection of Claims 4, 5, 6, 7, 9, and 15 in View of Pedrazzini, Sato, and Eroglu

Claims 4-7, 9, and 15 are rejected under 35 U.S.C. § 103(1) as being obvious in view of Pedrazzini, Sato, and Eroglu. All of the features of claims 4-7, 9, and 15, however, are not shown or suggested by Pedrazzini, Sato, and Eroglu, taken individually or in any combination. First, the reasons for allowability provided above as to claim 1 are also applicable to independent claims 4 and 15, as amended, with some minor variations. To clarify, claim 4, as amended, recites, among other things, "a closed loop feedback circuit for generating a signal **indicating the voltage across the electric motor.**" (emphasis added). The cited references, Pedrazzini, Sato, and Eroglu, do not show or suggest such a feature. The Office Action appears to rely on VSN and VSP in Pedrazzini to show such a feature. VSN and VSP, however, are used according to Pedrazzini to generate a signal indicating the voltage across the resistor (further identified above), not the motor 28. Such an arrangement does not show or suggest "indicating the voltage across" the motor, which can be subject to a number of different variables or variations, and Pedrazzini fails to disclose or suggest such an arrangement anywhere else in its circuitry. Accordingly, claim 4 is allowable over the cited references.

Independent claim 15, as amended, recites "a closed loop feedback means adapted and configured to **monitor the voltage across said motor** and generate a signal for input to the

microprocessor." (emphasis added). As already explained, reliance by the Office Action on Pedrazzini to show such a feature is misplaced because the VSN and VSP of Pedrazzini do not monitor the voltage across the motor, but rather monitor across the resistor, identified above. Accordingly, claim 15, as amended, is also allowable over the cited references.

Moreover, claims 5-7, and 9 depend either directly or indirectly from claims 4 and 15, and thus these claims are also patentable for at least the same reasons. In view of the above remarks, Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claims 4-7, 9, and 15 because no *prima facie* case of obviousness has been made on the record.

D. Rejection of Claim 8 in view of Pedrazzini, Sato, and Eroglu

Claim 8 depends directly from claim 4, and thus claim 8 is also not obvious for at least the same reasons given above with respect claim 4. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claim 8.

E. Rejection of Claims 16 and 17 in view of Pedrazzini, Sato, and Eroglu

Claims 16 and 17 depend directly from claim 15, and thus claims 16 and 17 are also not obvious for at least the same reasons given above with respect claim 15. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claims 16 and 17.

F. Rejection of Claim 18 in view of Pedrazzini, Sato, Eroglu, and Maxwell

Claim 18 is rejected under 35 U.S.C. § 103(a) as being obvious over Pedrazzini, Sato, Eroglu, and Maxwell. Applicant's reasons for allowability of claim 1, as amended, of are also applicable to claim 18, as amended. In addition, with respect to claim 18, as amended the Office Action here is relying on a five-way art rejection (including Official Notice), which Applicant understands to clearly reflect non-obviousness if five sources of prior art are needed to even establish a rejection. In addition, as in the above independent claims 1, 4, and 15, claim 18 includes a closed loop feedback adapted and configured to monitor the voltage across the motor. As explained above, no such functionality exists or is suggested in the cited references, taken individually or in combination. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claim 18 in view of the lack of obviousness in view of the cited references.

A new claim 20 depends directly from claim 18, and thus claim 20 is also patentable for at least the same reasons given above with respect claim 18.

G. Objections

In the Office Action, the drawings are objected to because, according to the Examiner, they fail to show "how CLP is low pass filtered and where the output of the filtered signal connects to OPA3 14." In response, an amended version of FIG. 1 is attached, one with the amendment noted in red and one replacement drawing.

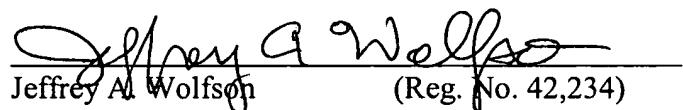
In addition, claim 18 is object to due to informalities in the claim language. In response, claim 18 has been amended to clarify the language.

H. Conclusion

In view of the remarks made herein, Applicant respectfully submits that the entire application is in condition for allowance, early notice of which would be appreciated. Should the Examiner not agree that all pending claims are allowable, then a personal or telephonic interview is respectfully requested to discuss any remaining issues and expedite the eventual allowance of these claims.

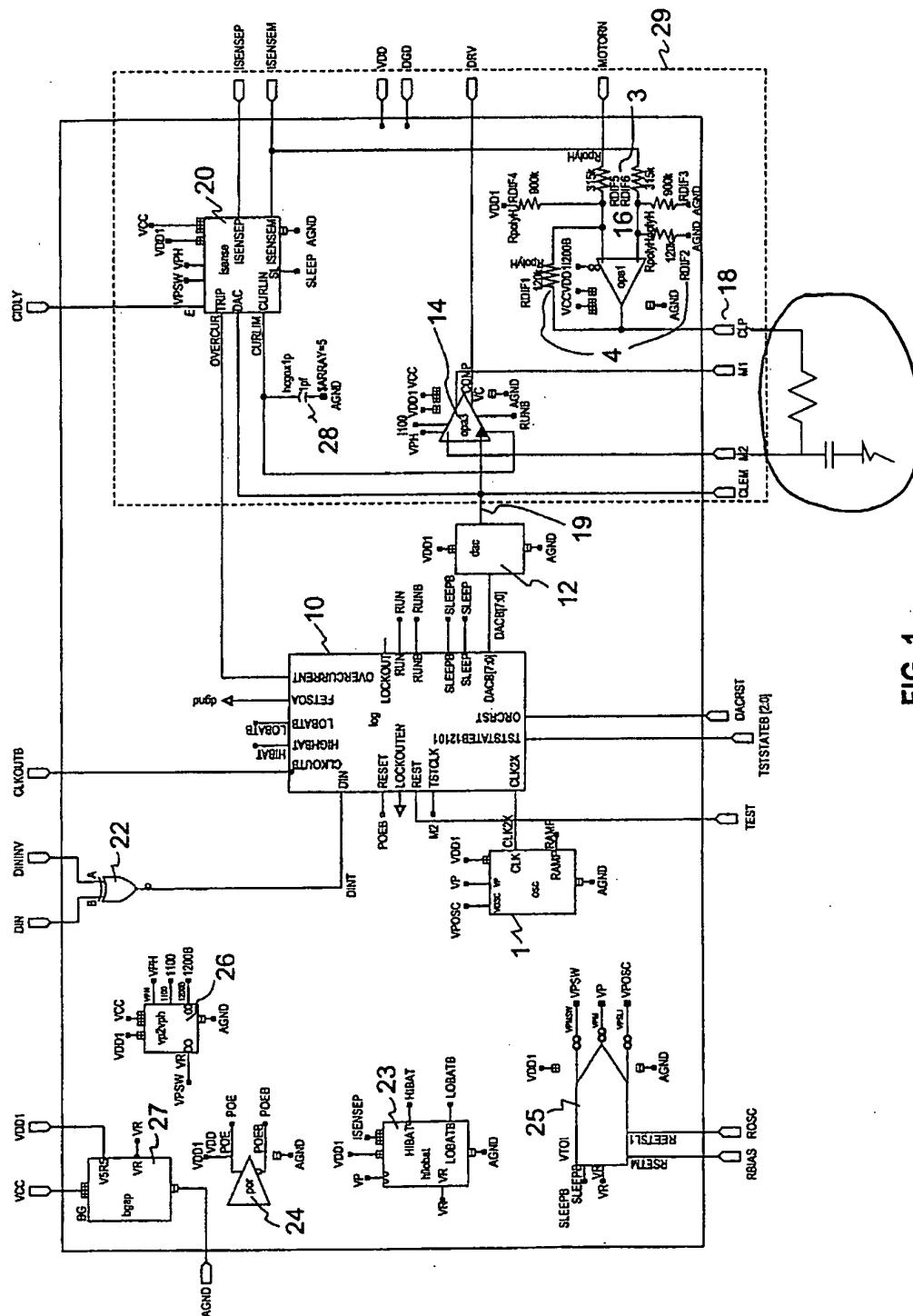
Respectfully submitted,

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